Africa embracing Open Science and Open Data

Introducing the African Open Science Platform

Ina Smith

Academy of Science of South Africa
South Africa’s contribution to OA (1)

- Open Institutional Repositories (Webometrics - 21)
- Open Data Repositories (re3data - 5)
- Open Educational Resources (E.g. UCT OER)
- MOOCs (MOOC List – 11)
- Open Access Journals (DOAJ – 67)
South Africa’s contribution to OA (2)

- Open Monographs
- Open Conference Proceedings (E.g. SUNConferences)
- Open Patents
- Open Source Software & Open Standards (incl. instruments)
- Open Access & Open Science Policies (ROARMAP - 9)
- Open Science
  - Research Data Management Planning (RDM)
Declarations & Statements

- OA2020; COAR2017 (2017)
- Dakar declaration on Open Science in Africa (2016)
- Salvador Declaration on Open Access Cape Town Declaration (2010)
- Cape Town Open Education Declaration (2008)
- Kigali Declaration on the Development of an Equitable Information Society in Africa
ASSAf Contributing to OA

The Dataverse Project

University of KwaZulu-Natal/ASSAf Workshop

Online Journal Management

Dates: 24 and 25 May 2017
Venue: Telematics lab, Westville Campus

Day 1: Wednesday 24 May 2017

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<th>Time</th>
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<td>09:00 – 09:10</td>
<td>Welcome &amp; Introduction</td>
<td>Faith Bhengu &amp; Carol Bertram</td>
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<td>09:10 – 10:00</td>
<td>SA Scholarly Publishing Landscape</td>
<td>Susan Veldsman (ASSAf)</td>
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<td>10:00 – 11:00</td>
<td>Requirements for a high quality scholarly journal</td>
<td>Susan Veldsman</td>
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Financially Sustainable Publishing

- Owners are universities, societies – non-profit
- R 8 000 – R 11 000-00 per year per journal
- Expenses:
  - Server, IT support
  - Copyeditor/Proofreader/Layout Editor
- Other – voluntarily contribution to science:
  - Editor
  - Reviewers
  - Authors
ASSAf Evaluating OA journals

Directory of Open Access Journals (DOAJ)

DOAJ is a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals.

Latest News

We have improved our XML validation

We are happy to announce that we have improved the features of our xml validation. As an article XML is uploaded to DOAJ from the publisher area we will check to see if the uploaded file meets a number of criteria. Is it actually XML? (have you given us a PDF by mistake?) Does the XML meet [...] Read More...

Tue, 16 May 2017 at 18:31

FOUR DOAJ JOURNALS TO BE INDEXED IN SCIENCEOPEN!

As you already know, we are recommending up to 10 journals to be indexed for free in ScienceOpen every month. We are happy to announce the winners of April: Desert, published by the University of Teheran. This journal publishes articles in ecology, climate change, drought, and desert. Revista do Instituto Florestal published by the Instituto Florestal [...] Read More...
ASSAf partnering with the AAU
African harvester of repositories

DATAD-R Institutional Repository Review Instrument

DATAD-R (Database of African Theses and Dissertations, incl. Research Articles) is a DSpace OAIFQM compliant harvester, used to harvest quality metadata from African institutional repositories, containing theses and dissertations, as well as peer-reviewed research articles. The AAU has worked with eleven pioneering institutions since 1996, through a feasibility study, and the pilot phase. Through site visits, training missions, workshops and meetings, the group has worked over policies, streamlined practices, established standards and successfully put together the founding records for the DATAD-R database. These institutions are de facto DATAD-R training centers. Read more: http://datad.aau.org/

About the DATAD-R Institutional Repository Review

The DATAD-R Review Instrument consists of various criteria institutional repositories need to adhere to, in order to be harvested by DATAD-R. Interested African repositories are encouraged to request an independent peer-review by experts in the field of IRs. A separate form needs to be completed for separate repositories each time. By completing and submitting the form, the review process is activated. Please provide as comprehensive information about the repository as possible. All information provided will be used for the purposes of evaluating the IR for possible inclusion in DATAD-R only, and will not be shared with any third parties. The criteria contained in this instrument are based on criteria from existing instruments, and contextualised f needs, without sacrificing the rigour of peer-review/external examinations, where appropriate.

Since December 2015, DATAD-R is hosted by the Academy of Science of South Africa and managed by the Association of African Universities (AAU).

For inquiries related to DATAD-R and the review of African repositories, please contact...
Towards a SA Open Science Policy

DRAFT WHITE PAPER ON SCIENCE, TECHNOLOGY AND INNOVATION: OUTLINE AND PROPOSED POLICY OPTIONS

Sustainable, inclusive wellbeing through transformative
Open Science Defined

“Open Science moves beyond open access research articles, towards encompassing other research objects such as data, software codes, protocols and workflows. The intention is for people to use, re-use and distribute content without legal, technological or social restrictions. In some cases, Open Science also entails the opening up of the entire research process from agenda-setting to the dissemination of findings.” - Open and Collaborative Science in Development Network project, funded by IDRC.
Open Data, Open Science and the Research Lifecycle (Foster)

About the African Open Science Platform (AOSP)

• Funded by the National Research Foundation (NRF) (SA Dept. of Science and Technology)
• Directed by CODATA (ICSU)
• Managed by Academy of Science of South Africa (ASSAf)
  • Through ASSAf hosting ICSU Regional Office for Africa (ICSU ROA)

Strengthen international science for the benefit of society by promoting improved scientific and technical data management and use.
Accord: Open Data in a Big Data World

• Values of open data in emerging scientific culture of big data
• Need for an international framework
• Proposes comprehensive set of principles
• Provides framework & plan for African data science capacity mobilization initiative
• Proposes African Platform

Call to Endorse
4 Focus Areas

- Promote development & adoption of data policies, principles, practices, standards
- Determine infrastructure available
- Address issues of incentives, best practice, benefits
- Foster training & capacity building activities

Create an awareness, stimulate dialogue (frontiers)
Key Stakeholders

- Global Network of Science Academies (IAP)
- International Council for Science (ICSU)
  - Regional Office for Africa (ROA)
  - Committee on Data for Science and Technology (CODATA)
  - World Data System (WDS)
- The World Academy of Sciences (TWAS)
- Research Data Alliance (RDA)
- Association of African Universities (AAU)
- Network of African Science Academies (NASAC)
- African Research Councils (incl. DIRISA, funders)
- African Universities
- African Governments
- NRENs (Internet Service Providers for Education)
- Other
Sci-GaIA Open Science Platform

http://www.sci-gaia.eu/osp/
Homo naledi fossil discovery a triumph for open access and education

September 28, 2016 8:42am SAST
How To Print Your Own 3D Replicas Of Homo Naledi And Other Hominin Fossils

Kristina Killgrove
CONTRIBUTOR

I write about archaeology, anthropology, and the classical world.

FOLLOW ON FORBES (46)

Opinions expressed by Forbes Contributors are their own.

Citizen Science
Challenges faced in terms of Data

“Without data you're just another person with an opinion.”

- W. Edwards Deming
Most Scientific Research Data From the 1990s Is Lost Forever

A new study has found that as much as 80 percent of the raw scientific data collected by researchers in the early 1990s is gone forever, mostly because no one knows where to find it.

Data sharing: Make outbreak research open access

Nathan L. Yozwiak, Stephen F. Schaffner & Pardis C. Sabeti

25 February 2015

“We urge researchers working on outbreaks to embrace a culture of openness.”
Retraction Watch

Weekend reads: Fake scientists; fake research; major evils of modern research

with one comment

The week at Retraction Watch featured the story of a graduate student who fought back after being caught in the middle of a fraud case, and the retraction of a hotly debated paper from Nature Cell Biology. Here’s what was happening elsewhere:

- Borat, the prominent scientist: Making up names and CVs is one of the latest tricks to game scientific metrics, our co-founders write in Nautilus.
- “The new owner of two prominent chains of Canadian medical journals is publishing fake research for cash, and pretending it is genuine.” (National Post)
- “[S]elective reporting, selective citing, and flaws in quality assurance and mentoring are the major evils of modern research.” (Research Integrity and Peer Review)
- Grad students and postdocs are frequently the scapegoats in cases of fraud, and they have little in the way of recourse in the current system, note our co-founders in STAT.
- When it comes to failing to publish clinical trial data, Canadian institutions are among the worst. (Darryl Hol, CBC News)

“I have temporarily retracted the study thanks to the alert from Pierre. The blog is not peer reviewed, it is intended for early release of research that will later be sent for peer review.”
I regret that my coauthors and I omitted statistically significant information in our 2004 article published in the journal Pediatrics.

Managing Intellectual Property

Open Data Commons - Legal tools for Open Data

licenses
- Public Domain Dedication and License (PDDL) — “Public Domain for data/databases”
- Attribution License (ODC-By) — “Attribution for data/databases”
- Open Database License (ODC-ODbL) — “Attribution Share-Alike for data/databases”

Applying a License
For instructions on how to apply the licenses to your material please see each license’s homepage.

Questions or suggestions? There is:
- A License FAQ (plus the General FAQ).
- A public mailing list, wiki page and contact email. See the contact page for details.
Protecting Privacy

Massive flaw in old Ster-Kinekor website leaked clients’ private data

Losing My Identity: How Biometric Identification Could Put Your Most Intimate Information At Risk

Fingerprint identification is routinely lauded as efficient and safe, but we should be hesitant to put finger to touchpad in the absence of a functional regulator.

Ster-Kinekor’s old website, which was replaced in 2016, had a security flaw which leaked the private data of as many as 6.7 million users.

South African software developer Matt Cavanagh, who goes by RogueCode, discovered the vulnerability and alerted Ster-Kinekor to it.

Following the guidelines of responsible disclosure, Cavanagh gave Ster-Kinekor the chance to patch the vulnerability before releasing the details to the public.

Power & Internet Access
(Infrastructure)
Incentives for Data Sharing

Sowing the seed: Incentives and motivations for sharing research data, a researcher's perspective
How to define the evolving role of data scientist

Data science is a hot new career, but companies still aren’t sure how to best use these employees. Here’s how to hire data scientists with a clear strategy in place.

Robert Half Top Ten Technology Jobs In 2017: Data Scientists, Big Data Expertise In High Demand
Stimulate Dialogue

INTERNATIONAL DATA WEEK
SEPTEMBER 11-17, 2016

DATA SCIENCE JOURNAL

ROUNDTABLE ON DATA SCIENCE POST-SECONDARY EDUCATION

ROUND TABLE ON DATA SCIENCE POST-SECONDARY EDUCATION

Enhancing Interoperability and Capabilities of Earth Science Data using the Observations Data Model 2 (ODM2)

Free

MAR 20

Roundtable on Data Science Post-Secondary Education: Meeting #2
by Committee on Applied and Theoretical Statistics
Value of Data in Business

$53.8 billion
Mark Zuckerberg

$498 billion
Lary Page

$1.66 billion
Jack Dorsey
Value of an African Platform (1)

- Collective view of Open Science activities
- Create awareness
- Showcase African research
- Contribute to global knowledgebase
- Increase return on investment (re-use)
- Identify lack of data/opportunities/gaps
Value of an African Platform (2)

• Identify needs e.g. skills development, infrastructure, policy formulation, etc.
• Act as conduit for links with international open data and open science programmes and standards
• Cross-use data across disciplines/studies
• Establish relationships between data
• Manage Intellectual Property (IP)
Value of an African Platform (3)

• Make data more discoverable/visible (metadata)
• Encourage collaboration between scientific & private sectors, citizens
• Participate in collective problem-solving
• Allow verification of existing data, predict trends
• Accelerate discovery – speed is everything (e.g. outbreaks)
• Attract funders
AOSP Actions & Deliverables

4 Pillars:
• Policies: Policy Framework
• Incentives: Guidelines
• Capacity Building: Curriculum & Training
• Infrastructure: Roadmap

Create awareness, stimulate dialogue, connect people & projects
Events

• Science Forum South Africa 2016
• Sci-GaIA User Forum and Conference 2017, South Africa
• World Data Systems Meeting, Grenoble, France (April 2017)
• 14th General Conference of the AAU (June 2017), Ghana
• Botswana, Madagascar National Open Science Forum
• PKP Conference on publishing in the Global South, Canada
• CODATA-RDA Research Data Science Summer School (July 2017), Italy
• UbuntuNet Connect 2017, Ethiopia
Closing Remarks

• Collaborate & learn – strength in diversity
• Data the new “gold” – predict trends (Prof Joseph Wafula)
• Trusted data managed in trusted way
• Exploit data for the benefit of society (Min Naledi Pandor)
• Tell the African story, in an African way
Acknowledgments

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Thank you!

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